

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau



PCT

(43) International Publication Date  
15 September 2005 (15.09.2005)

(10) International Publication Number  
**WO 2005/086063 A3**

(51) International Patent Classification<sup>7</sup>: **G06F 19/00,**  
17/00

PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY,  
TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU,  
ZA, ZM, ZW.

(21) International Application Number:  
**PCT/IB2005/050537**

(84) Designated States (unless otherwise indicated, for every  
kind of regional protection available): ARIPO (BW, GH,  
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,  
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),  
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,  
FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,  
SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN,  
GQ, GW, ML, MR, NE, SN, TD, TG).

(22) International Filing Date:  
**11 February 2005 (11.02.2005)**

Declaration under Rule 4.17:  
as to applicant's entitlement to apply for and be granted  
a patent (Rule 4.17(ii)) for the following designations AE,  
AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ,  
CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE,  
EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS,  
JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA,  
MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM,  
PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY,  
TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA,  
ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ,  
NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM,  
AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT,  
BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR,  
HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK,  
TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,  
GW, ML, MR, NE, SN, TD, TG)

(25) Filing Language:  
**English**

Published:

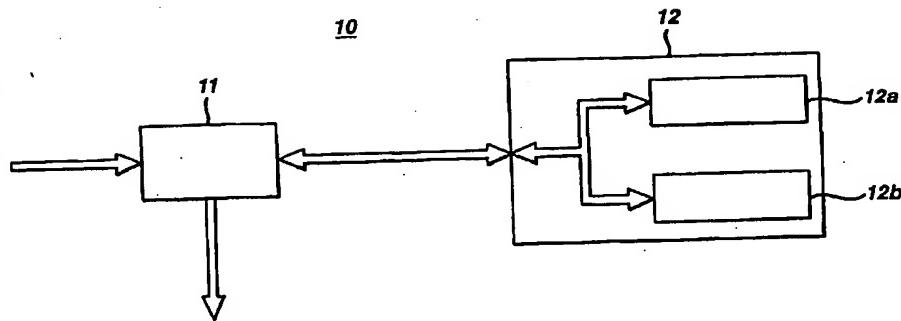
(26) Publication Language:  
**English**

— with international search report

[Continued on next page]

(54) Title: METHOD AND SYSTEM TO MINIMIZE POWER CONSUMPTION BY USING STAGED LIFE-THREATENING ARRHYTHMIA DETECTION ALGORITHM

WO 2005/086063 A3



(57) Abstract: A two-stage digital algorithm uses a highly sensitive low power digital first stage to detect one or more alarm conditions, and one or more complex digital subsequent stages that identify the detected alarm condition with more specificity. The one or more complex digital subsequent stages are not activated, and consume no power, until an alarm condition is sensed by the low power consumption digital first stage. Given that the second stage will process the data more rigorously, the low power first stage can be set to be more sensitive and generate what would otherwise be excessive alarms, which are ultimately filtered out by the subsequent stages. By staging the digital analysis algorithms, the present invention achieves high sensitivity for alarm conditions with low computational throughput and low power consumption, and achieves high specificity with more computationally intensive algorithms that only run occasionally.



(88) Date of publication of the international search report:  
30 March 2006

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*